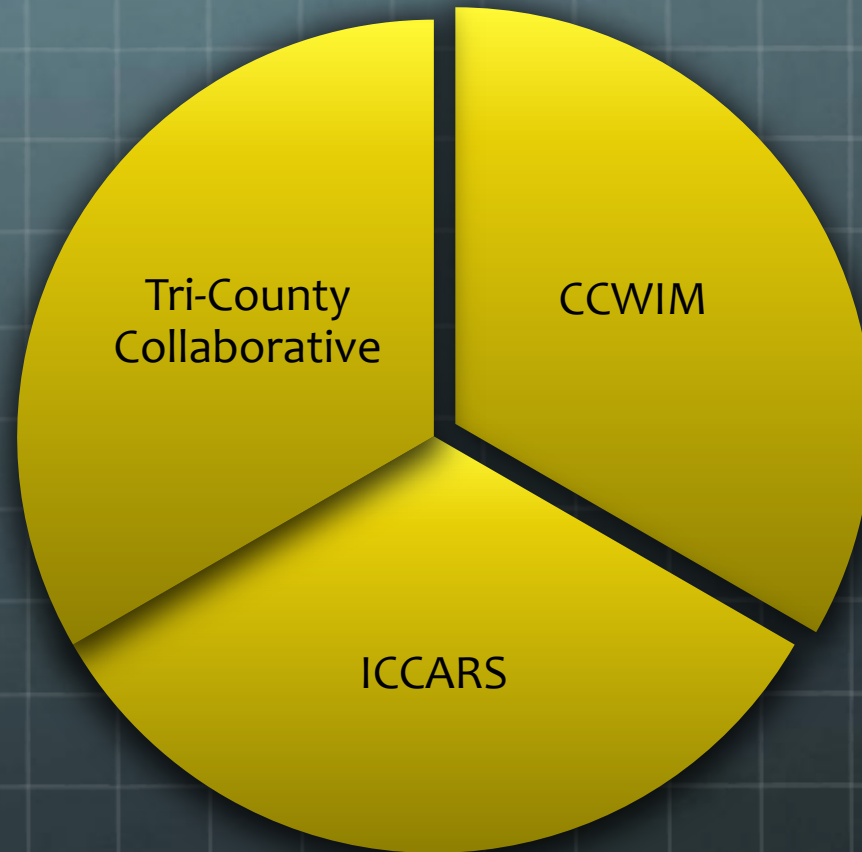


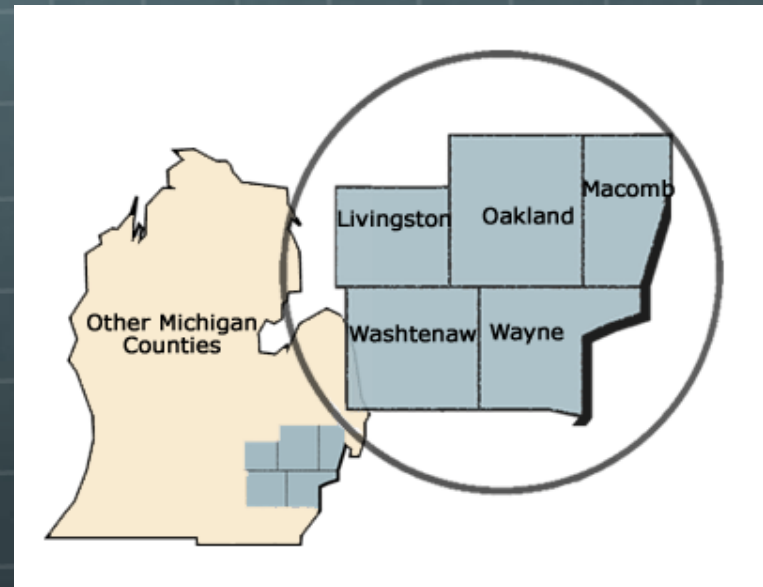


Wayne County Mathematics and Science Center
Wayne, MI
David Bydlowski bydlowd@resa.net

The GLOBE Program in Wayne County, MI



Tri-County Collaborative



Elementary



GLOBE



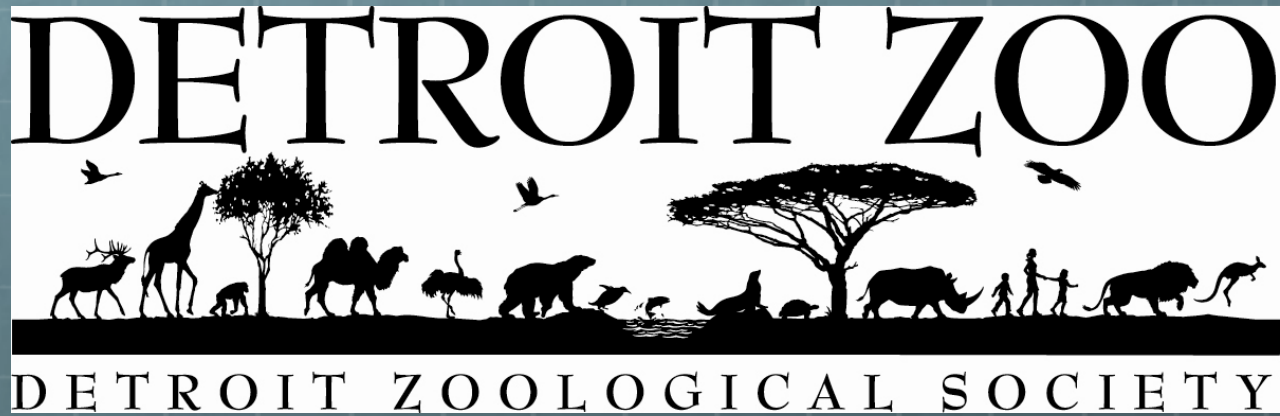
PD Series

Grade Level Specific







K - 7

Location



Elementary GLOBE

-  Soil for K and 3rd Grade
-  Clouds for 1st Grade
-  Earth Systems for 1st and 2nd Grade
-  Seasons for 1st Grade



Comparing and Contrasting Watersheds in Michigan

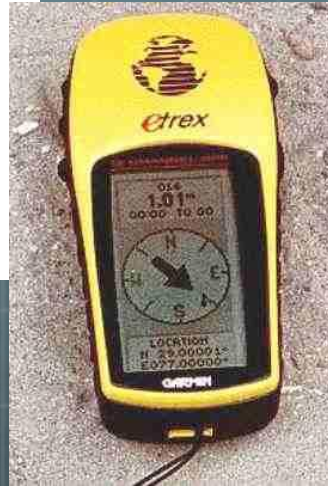
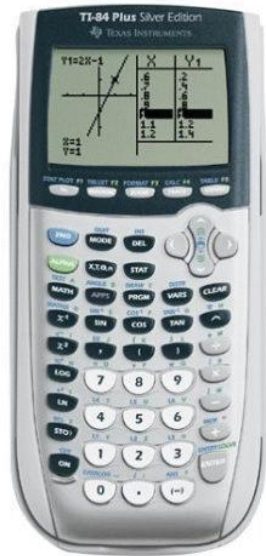


Copyright 2005 - geology.com

2009 Vernier Technology Award Winning Teacher



Kristy Gollakner
Upper Peninsula
7th Grade





- Temperature, Turbidity, Total Dissolved Solids, pH
- Water Transparency, Water Temperature, Electrical Conductivity
- GPS
- Hydrology

H2O Mapper

Observation Information																																																																																																						
[General Information]		Program:	CCWIM																																																																																																			
Number:	409000508091301	Date:	2008-09-13																																																																																																			
School:	Wayne RESA	Teacher:	Andy Henry																																																																																																			
City:	Wayne	County:	Washtenaw																																																																																																			
Stream:	Huron River	WaterShed:	Huron R./HIURON																																																																																																			
Latitude:	-83.91716	Longitude:	42.37967																																																																																																			
Note:	Bug collecting																																																																																																					
[Physical/Chemical Measurements] [Physical Characteristics of Stream] [Macroinvertebrate Counts] [Questions]																																																																																																						
<div> <div> Group 1: Pollution Sensitive <table border="1"> <tr><td>Water Penny Larvae:</td><td>15</td><td>C</td></tr> <tr><td>Caddisfly Larvae (not net-spinning):</td><td>32</td><td>C</td></tr> <tr><td>Mayfly Nymphs:</td><td>16</td><td>C</td></tr> <tr><td>Stonefly Nymphs:</td><td>7</td><td>R</td></tr> <tr><td>Diptera (Water Snipe Fly larvae):</td><td>4</td><td>R</td></tr> <tr><td>Dobsonfly (Hellgrammite):</td><td>1</td><td>R</td></tr> <tr><td>Gilled Snails:</td><td>5</td><td>R</td></tr> <tr><td>Total # R's:</td><td>4</td><td>Score (#R's x 5.0): 20</td></tr> <tr><td>Total # C's:</td><td>3</td><td>Score (#C's x 5.3): 15.9</td></tr> <tr><td>Total Score for Group 1:</td><td colspan="2">35.9</td></tr> </table> </div> <div> Group 2: Somewhat Pollution Sensitive <table border="1"> <tr><td>Beetle Larva:</td><td></td><td>0</td></tr> <tr><td>Adult Beetles:</td><td></td><td>0</td></tr> <tr><td>Cranefly Larva:</td><td></td><td>0</td></tr> <tr><td>Damselfly Nymphs:</td><td></td><td>0</td></tr> <tr><td>Dragonflies Nymphs:</td><td></td><td>0</td></tr> <tr><td>Scuds (Amphipods):</td><td>12</td><td>C</td></tr> <tr><td>Crayfish:</td><td>4</td><td>R</td></tr> <tr><td>Alderfly Larvae:</td><td></td><td>0</td></tr> <tr><td>Blackfly Larva:</td><td></td><td>0</td></tr> <tr><td>Net-Spinning Caddisfly:</td><td>27</td><td>C</td></tr> <tr><td>Clams (fingernail-sized):</td><td>31</td><td>C</td></tr> <tr><td>Total # R's:</td><td>1</td><td>Score (#R's x 3.0): 3</td></tr> <tr><td>Total # C's:</td><td>3</td><td>Score (#C's x 3.2): 9.6</td></tr> <tr><td>Total Score for Group 2:</td><td colspan="2">12.6</td></tr> </table> </div> <div> Group 3: Pollution Tolerant <table border="1"> <tr><td>Aquatic Worms:</td><td>3</td><td>R</td></tr> <tr><td>Leaches:</td><td></td><td>0</td></tr> <tr><td>Midge Larvae:</td><td></td><td>0</td></tr> <tr><td>Pouch Snails:</td><td>2</td><td>R</td></tr> <tr><td>Other Diptera, "True Flies":</td><td></td><td>0</td></tr> <tr><td>"True Bugs" *:</td><td></td><td>0</td></tr> <tr><td>Total # R's:</td><td>2</td><td>Score (#R's x 1.1): 2.2</td></tr> <tr><td>Total # C's:</td><td>0</td><td>Score (#C's x 1.0): 0</td></tr> <tr><td>Total Score for Group 3:</td><td colspan="2">2.2</td></tr> </table> </div> </div>				Water Penny Larvae:	15	C	Caddisfly Larvae (not net-spinning):	32	C	Mayfly Nymphs:	16	C	Stonefly Nymphs:	7	R	Diptera (Water Snipe Fly larvae):	4	R	Dobsonfly (Hellgrammite):	1	R	Gilled Snails:	5	R	Total # R's:	4	Score (#R's x 5.0): 20	Total # C's:	3	Score (#C's x 5.3): 15.9	Total Score for Group 1:	35.9		Beetle Larva:		0	Adult Beetles:		0	Cranefly Larva:		0	Damselfly Nymphs:		0	Dragonflies Nymphs:		0	Scuds (Amphipods):	12	C	Crayfish:	4	R	Alderfly Larvae:		0	Blackfly Larva:		0	Net-Spinning Caddisfly:	27	C	Clams (fingernail-sized):	31	C	Total # R's:	1	Score (#R's x 3.0): 3	Total # C's:	3	Score (#C's x 3.2): 9.6	Total Score for Group 2:	12.6		Aquatic Worms:	3	R	Leaches:		0	Midge Larvae:		0	Pouch Snails:	2	R	Other Diptera, "True Flies":		0	"True Bugs" *:		0	Total # R's:	2	Score (#R's x 1.1): 2.2	Total # C's:	0	Score (#C's x 1.0): 0	Total Score for Group 3:	2.2	
Water Penny Larvae:	15	C																																																																																																				
Caddisfly Larvae (not net-spinning):	32	C																																																																																																				
Mayfly Nymphs:	16	C																																																																																																				
Stonefly Nymphs:	7	R																																																																																																				
Diptera (Water Snipe Fly larvae):	4	R																																																																																																				
Dobsonfly (Hellgrammite):	1	R																																																																																																				
Gilled Snails:	5	R																																																																																																				
Total # R's:	4	Score (#R's x 5.0): 20																																																																																																				
Total # C's:	3	Score (#C's x 5.3): 15.9																																																																																																				
Total Score for Group 1:	35.9																																																																																																					
Beetle Larva:		0																																																																																																				
Adult Beetles:		0																																																																																																				
Cranefly Larva:		0																																																																																																				
Damselfly Nymphs:		0																																																																																																				
Dragonflies Nymphs:		0																																																																																																				
Scuds (Amphipods):	12	C																																																																																																				
Crayfish:	4	R																																																																																																				
Alderfly Larvae:		0																																																																																																				
Blackfly Larva:		0																																																																																																				
Net-Spinning Caddisfly:	27	C																																																																																																				
Clams (fingernail-sized):	31	C																																																																																																				
Total # R's:	1	Score (#R's x 3.0): 3																																																																																																				
Total # C's:	3	Score (#C's x 3.2): 9.6																																																																																																				
Total Score for Group 2:	12.6																																																																																																					
Aquatic Worms:	3	R																																																																																																				
Leaches:		0																																																																																																				
Midge Larvae:		0																																																																																																				
Pouch Snails:	2	R																																																																																																				
Other Diptera, "True Flies":		0																																																																																																				
"True Bugs" *:		0																																																																																																				
Total # R's:	2	Score (#R's x 1.1): 2.2																																																																																																				
Total # C's:	0	Score (#C's x 1.0): 0																																																																																																				
Total Score for Group 3:	2.2																																																																																																					
BIOLOGICAL ASSESSMENT <table border="1"> <tr><td>Biological Assessment Score:</td><td>50.7</td></tr> <tr><td>Rating:</td><td>Excellent</td></tr> </table>		Biological Assessment Score:	50.7	Rating:	Excellent	Note * Water Striders, Backswimmers, Water Boatman, other "True" Bugs																																																																																																
Biological Assessment Score:	50.7																																																																																																					
Rating:	Excellent																																																																																																					
Edit Record																																																																																																						

H2O Mapper

RESA/ IGRE Version, v0.2 Watershed Dictionary: Huron R./ HURON/ 4090005 Help

01-28-09 10:53 am
Welcome, Andy Log Out

Search for: Scale 1: 324420 Tools

Layer transparency
Watercourse

General Observation Information
Records shown 1 - 1 of 1

Filter 4090005
Apply
Add Record

Result

	AREA	PERIMETER	ID	HUID	HUIDNAME	ACRES	MLRA	MLRANAME
772238336	597882.500	6	MD006	MORLEY-BLOUNT-PEWAMO (MD006)	189562	98	Southern Michigan and Northern Indiana Drift Plain	
4257408256	2953764.250	12	MD04	SPONKS-HOUGHTON-BOYER (MD04)	1045162	111	Indiana and Ohio Till Plain	
2259777536	1642821.500	15	MD017	PEAMI-CONOVER-BROOKSTON (MD017)	554756	98	Southern Michigan and Northern Indiana Drift	

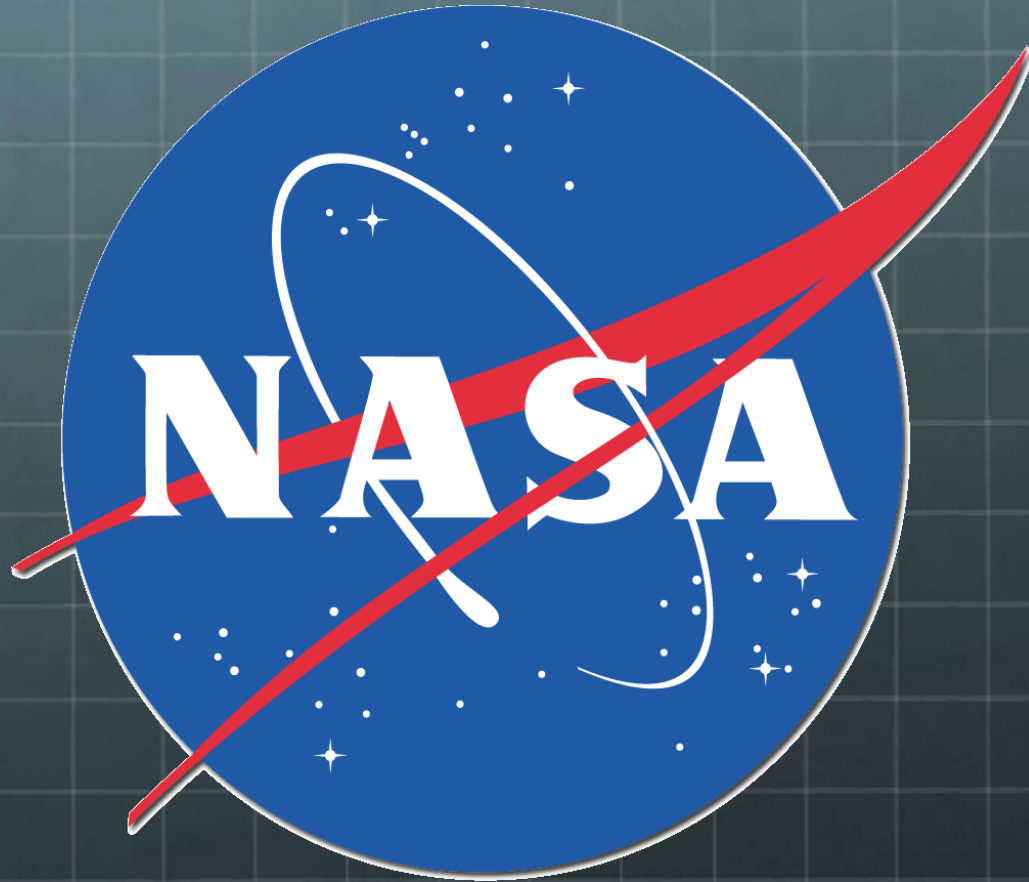
Apply on Layer Soils

Map Server W3C XHTML 1.0

ICCARS

Investigating Climate Change and Remote Sensing






K-12 Education Grant Targeting 8th – 12th Grade







Goal

Students and Teachers will have a working understanding of the science behind global climate change and its relationship to human activity, in particular its relationship to land-use and land-cover (LULC) changes on multiple scales through NASA data products and models.

Outcomes

-  Understand and use remotely sensed data to study global climate change.
-  Use an AROKATS kite-based sensor to collect and process remotely-sensed data.
-  Collaborate via a social network of peers
-  Align understanding to Michigan's Merit Curriculum
-  Implementation of Project-Based Learning

Deliverables

-  Student produced AEROKATS field manual and image processing lab guide.
-  Develop a handheld field data collector for spatially referenced data.
-  Develop 48 Instructional Units to be used in STEM classes to study climate change.
-  Design an e-Learning Collaboratory for social networking, data sharing, and peer review.



Agricultural and Environmental Research Observation Kites and Tethered Systems **(AEROKATS)**

**Geoff Bland/NASA GSFC WFF
AeroScienceCenter
757-824-2855**



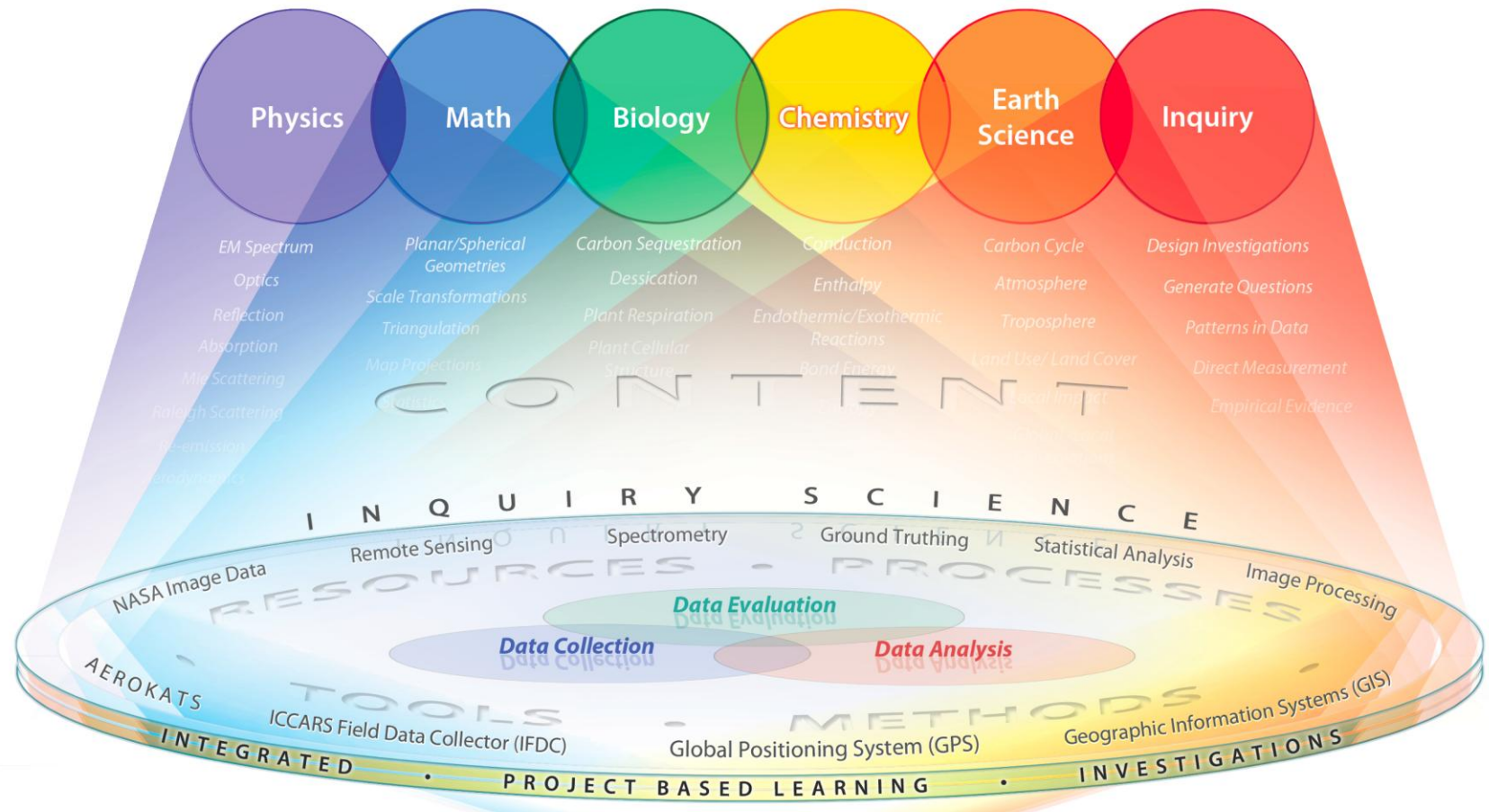
1st Year: Visible and Near Infrared Imagery
2nd Year: Will include Air Column data sampling

Implementation

- 🌐 August, 2010: Global Climate Change One-Day Conference
- 🌐 2010-2011 School Year: Project Development with students (30) and teachers (12)
- 🌐 May, 2011: Global Climate Change One-Day Conference
- 🌐 August, 2011: 5-Day Teacher Training
- 🌐 2011-2012 School Year: Implementation with students (1500) and teachers (36 + 12)

I C C A R S

Investigating Climate Change and Remote Sensing



Social Networking

Collaboration

Sharing

MIScience eCollaboratory

Reporting

Peer Review

Action



- 🌐 Active participation in the GLOBE Student Climate Research Campaign
- 🌐 Use of GLOBE Protocols – Temperature / Precipitation/GPS
- 🌐 Earth System Science Projects – Carbon Cycle / Watershed Dynamics / Seasons and Biomes

Can we make this happen?



Wayne County Mathematics and Science Center
Wayne, MI
David Bydlowski bydlowd@resa.net